

Internet Engineering

241-461

Robert Elz

kre@munnari.OZ.AU

kre@coe.psu.ac.th

<http://fivedots.coe.psu.ac.th/~kre>

HTTP(2)

- ◇ Start with URL
 - `protocol://host-name/path`
 - `http://fivedots.coe.psu.ac.th/~kre`
 - ▷ Protocol: `http`
 - ▷ Host-name: `fivedots.coe.psu.ac.th`
 - ▷ Path: `~kre`
- ◇ If protocol is not `http`
 - go elsewhere
 - ▷ plenty of other valid protocols
 - here we consider `http` only
- ◇ Connect to host-name
 - Use DNS to translate host-name to address
 - Connect to standard `http` port (80) at address
- ◇ Send
 - GET path
 - Plus some other information

HTTP(3)

- ◇ Send
 - GET path
- ◇ Server responds with
 - Status Information
 - The file data
 - ▷ contents of the file at the path requested
 - ▷ HTTP object
 - Terminate Connection
 - ▷ Indicates end-of-file

Request Format

◇ For each request

- Send command path HTTP-version
- Then send header
 - ▷ 0 or more header lines
 - ▷ Request complete
- Then send blank line

◇ Commands

- GET
 - ▷ fetch an object
- POST
 - ▷ send an object
 - object follows headers
- HEAD
 - ▷ Get just header information
 - No object content included

Request Format (2)

◇ Header Lines

- Derived from e-mail headers
 - ▷ Similar syntax
- Host: host-name
 - ▷ Host name for path
 - ▷ Identifies which virtual server
- User-agent: browser name and version
 - ▷ Allows response suitable for browser
- Connection: close
 - ▷ Should connection be closed after each file

Reply Format

◇ Information to send

- Did request succeed?
 - ▷ Yes, or No and why not
- Type of data
 - ▷ text/html
 - ▷ image/jpeg
 - MIME data types
 - Multipurpose Internet Mail Extensions
- Last Modification Time
 - ▷ Client can tell if any data is new
 - ▷ Or whether nothing has altered
- Size of data
 - ▷ Byte count of data to be transmitted
 - (and more)

Reply Format (2)

◇ Request status

- 3 digit code
 - ▷ First digit indicates overall status
 - 1 this is not a response
 - 2 success
 - 3 need more information
 - 4 Error in Request
 - no more digits
 - status error
 - Request completed or we unable to handle
 - ▷ Later digits make error precise.
- Explanation
 - ▷ Human readable explanation of error

E-mail

◇ One of the oldest network applications

- After Remote Login & File Transfer

◇ Network designed to allow remote access

- Remote login a requirement

◇ To work on remote system

- Need to transfer data
 - ▷ Input data for program
 - ▷ Output to be examined/printed
- File Transfer a requirement

◇ With File Transfer Protocol (FTP)

- Can send file to remote system
- there deliver to user
 - ▷ rather than store in named location
- This is e-mail
 - ▷ An offshoot of FTP